

COMPREHENSIVE ROUND 2 REPORT OUTLINE

- 1.0 Introduction
 - 1.1. Area of Study
 - 1.2. Purpose of Report
 - 1.3. Site Background
 - 1.4. Report Organization
- 2.0 Sources of Environmental Data
 - 2.1 Lower Willamette Group
 - 2.1.1 Pre-AOC Sampling Activities
 - 2.1.2 Round 1 Sampling Activities
 - 2.1.3 Round 2 Sampling Activities
 - 2.2. Existing Historical and Concurrent Studies
 - 2.2.1 Data Quality
 - 2.2.2 Chemical Data Review Criteria
 - 2.2.3 Biological Data Review Criteria
 - 2.2.4 Site Characterization and Risk Assessment (SCRA) Database
 - 2.2.5 Existing Chemical and Biological Data
 - 2.3 Data Usability
 - 2.3.1 Data Quality
 - 2.3.2 Sediment Stability
- 3.0 Conceptual Site Model Summary
 - 3.1 In-River Physical System Environments
 - 3.2 Potential Sources and Pathways
 - 3.3 Chemical Distribution and Potential Exposure Media
 - 3.4 Fate and Transport
 - 3.5 Receptors
 - 3.5.1 Human
 - 3.5.2 Ecological
- 4.0 Physical Setting
 - 4.1 Land Use
 - 4.1.1 Portland Harbor Overview
 - 4.1.2 Navigational Channel Authorization History
 - 4.1.3 Dredging and Capping Activities
 - 4.1.4 Stormwater Systems
 - 4.1.5 General Land Use History
 - 4.1.6 Historical Shoreline and Fill Placement
 - 4.1.7 Historical Overwater Operations
 - 4.2 Hydrogeology
 - 4.3 Hydrology

- 4.3.1. Regional Datums
- 4.3.2 Willamette River Seasonal Stages and Flows
- 4.3.3 Hydrodynamics
- 4.4 Riverbed Characteristics and Sediment Dynamics
 - 4.4.1 Bed Bathymetry and Time-Series Change Data
 - 4.4.2 Physical Characteristics of Sediments
- 4.5 Sediment Transport Regimes
 - 4.5.1 Upstream of the Study Area
 - 4.5.2 RI Study Area
 - 4.5.3 Downstream of the Study Area
- 4.6 Habitat
 - 4.6.1 Open-Water Habitat
 - 4.6.2 Bank and Riparian Habitat
- 4.7 Human Access and Use
- 5.0 Identification of Sources
 - 5.1. Upland Sources
 - 5.1.1. Site Summaries
 - 5.1.2. Groundwater
 - 5.1.3. Direct Discharge - Stormwater and Wastewater
 - 5.1.4. Riverbank Erosion
 - 5.1.5. Atmospheric Deposition
 - 5.1.6. Overwater Releases
 - 5.2. Sources Outside the Study Area
 - 5.2.1. Non-Study Area Sources in the Lower Willamette River
 - 5.2.2. Sources above Willamette Falls (Upper Willamette River)
 - 5.3. Historical Sources
- 6.0 In-River Chemical Distribution
 - 6.1. Indicator Chemicals in Sediment
 - 6.1.1. Nature and Extent of Indicator Chemicals in Study Area Sediment
 - 6.1.2. Upstream and Downstream Data Evaluation
 - 6.1.3. Background Sediment Concentrations
 - 6.1.4. Temporal Trends in Surface Sediment Chemical Data
 - 6.2. Transition Zone Water and Groundwater Seeps
 - 6.2.1. Groundwater Seeps
 - 6.2.2. Transition Zone Water Analytical Results—Nature and Extent Summary
 - 6.2.3. Spatial and Temporal Nature of the TZW Data
 - 6.3. Indicator Chemicals in Surface Water
 - 6.3.1. Non-LWG Data
 - 6.3.2. Round 2A Sample Collection Conditions
 - 6.3.3. Nature and Extent of Surface Water Indicator Chemicals
 - 6.3.4. Particulate-Phase COPC Concentrations
 - 6.4. Biota Chemical Distribution
 - 6.4.1. Initial Chemicals of Concern
 - 6.4.2. Nature and Extent of Indicator Chemicals in Study Area Tissue

- 6.4.3. Nature and Extent of Selected Initial Contaminants of Concern in Tissue Collected Upriver From the Study Area Tissue
- 6.4.4. Nature and Extent of Selected Initial Contaminants of Concern in Tissue Collected Downstream From the Study Area Tissue
- 7.0 Overview and Approach to Assessment of Loading, Fate, and Transport Processes
 - 7.1. Chemical Loading to the Study Area From External Sources
 - 7.1.1. Upstream Loading
 - 7.1.2. Storm Water
 - 7.1.3. Upland Groundwater Plumes
 - 7.1.4. Atmospheric Deposition
 - 7.1.5. Industrial Discharge
 - 7.1.6. Upland Soil and River Bank Erosion
 - 7.2. Fate and Transport Processes Within the Study Area
 - 7.2.1. Sediment and Pore Water Fate and Transport Processes
 - 7.2.2. Surface Water Fate and Transport Processes
 - 7.2.3. Biological Fate and Transport Processes
 - 7.3. River-Wide Fate and Transport Model
 - 7.3.1. Modeling Objectives
 - 7.3.2. Hybrid Model Components
 - 7.3.3. Path Forward
- 8.0 Initial Human Health Risk Evaluation Summary
 - 8.1 Data Evaluation
 - 8.2 Exposure Assessment
 - 8.3 Toxicity Assessment
 - 8.4 Risk Characterization and Uncertainty Analysis
 - 8.4.1 Risk Characterization Results
 - 8.4.2 Uncertainty Analysis
 - 8.4.3 Data Needs Evaluation
 - 8.5 Screening of Surface Water and Transition Zone Water Data
 - 8.5.1 Screening of Surface Water Data
 - 8.5.2 Screening of Transition Zone Water Data
 - 8.5.3 Screening Evaluation Conclusions
 - 8.6 Summary and Conclusions
- 9.0 Initial Ecological Risk Evaluation Summary
 - 9.1 ERA Dataset
 - 9.2 Benthic Risk Assessment
 - 9.3 Fish Risk Assessment
 - 9.4 Wildlife Risk Assessment
 - 9.5 Amphibian and Reptile Risk Assessment
 - 9.6 Aquatic Plants Risk Assessment
- 10.0 Preliminary Identification of Initial Areas of Potential Concern
 - 10.1 Approach and Methods

- 10.1.1 General Approach
- 10.1.2 Human Health Specific Methods
- 10.1.3 Ecological Specific Methods
- 10.2 Background Information
 - 10.2.1 Source and Derivation of Background Values
 - 10.2.2 Use of Background Values in AOPC Development
 - 10.2.3 Background and RI/FS
- 10.3 Summary of Initial iPRGs
- 10.4 Summary of Risk Areas
 - 10.4.1 Human Health Risk
 - 10.4.2 Ecological Risk
- 10.5 Overall iAOPCs
- 11.0 Conceptual Site Model
 - 11.1. Loading, Fate, and Transport of iCOCs in the Study Area
 - 11.1.1. Loading, Fate, and Transport Processes
 - 11.1.2. Loading, Fate, and Transport of iCOCs
 - 11.1.3. Summary of iCOC Loading, Fate, and Transport to the Study Area
 - 11.2. Site-Wide AOPC
 - 11.2.1. Physical Setting, Infrastructure, and Operational History
 - 11.2.2 Chemical Distribution of Total PCBs in the Site-wide AOPC
 - 11.2.3. Potential Sources of iCOCs
 - 11.2.4. Relationship of Upland Sources to the Distribution of iCOCs
 - 11.3. CSMs for Initial Areas of Potential Concern
 - 11.3.1 AOPC 1
 - 11.3.2 AOPC 2
 - 11.3.3 AOPCs 3, 4, 5
 - 11.3.4 AOPC 6
 - 11.3.5 AOPC 7
 - 11.3.6 AOPCs 8, 9
 - 11.3.7 AOPC 10
 - 11.3.8 AOPC 11
 - 11.3.9 AOPCs 13, 12
 - 11.3.10 AOPC 14
 - 11.3.11 AOPCs 15,16
 - 11.3.12 AOPC 17
 - 11.3.13 AOPC 18
 - 11.3.14 AOPC 19
 - 11.3.15 AOPCs 20, 21, 22, 23
 - 11.3.16 AOPC 24
 - 11.3.17 AOPC 25
 - 11.3.18 AOPC 27
 - 11.3.19 AOPC 26
 - 11.3.20 AOPC T4

12.0 Data Gaps and Additional Data Needs

12.1 Summary of Findings of the Comprehensive Round 2 Report

- 12.1.1 Nature & Extent
- 12.1.2 Human Health Risk
- 12.1.3 Ecological Risk
- 12.1.4 Conclusions

12.2 Harbor-wide Data Needs

- 12.2.1 Site boundary
- 12.2.2 Background
- 12.2.3 Risk Drivers
- 12.2.4 Additional RI Data Needs
- 12.2.5 Fate and Transport Data Needs
- 12.2.6 Other FS Data Needs

12.3 Data Needs for iAOPCs

- 12.3.1 Nature and Extent iAOPCs
- 12.3.2 ID Sources & Pathways at iAOPCs

12.4 Data Needs for Areas that are not iAOPCs

- 12.4.1 Non-iAOPC risk areas
- 12.4.2 Source Identification